



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/535,256

05/18/2005

Mitsuyuki Kanbe

KANBE3

5976

1444 7590 03/17/2008  
BROWDY AND NEIMARK, P.L.L.C.  
624 NINTH STREET, NW  
SUITE 300  
WASHINGTON, DC 20001-5303

EXAMINER

HENRY, MICHAEL C

ART UNIT

PAPER NUMBER

1623

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,256	<b>Applicant(s)</b> KANBE ET AL.	
	<b>Examiner</b> MICHAEL C. HENRY	<b>Art Unit</b> 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

The following office action is a responsive to the Amendment filed, 10/23/07.

The amendment filed 10/23/07 affects the application, 10/535,256 as follows:

1. Claims 1 and 2 have been amended.
2. The responsive to applicants' arguments is contained herein below.

Claims 1-15 are pending in the application

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al.

(US 3,912,591).

In claim 1, applicant claims a high pullulan content liquid, which has a viscosity of 2.5 mm<sup>2</sup>/s or more in terms of a pullulan concentration of 10%(w/w) when determined at 30°C on the Ubelode viscometer method, a common bacterial count of less than 300 cells/g product, a negativity with respect to coliform group, a pH of 4.5 to 7.5, and a pullulan concentration of 25%(w/w) or more.” Claim 2 is drawn to the composition of claim 1, wherein said pullulan has a weight-average molecular weight of (MW) of 5, 000 to 500, 000. Claims 3-5, 8, 9, 12, 13 are drawn to said composition which is in aqueous form and wherein said composition further contains disinfectants and bacteriostats such as ethanol.

Art Unit: 1623

Kato et al. disclose a high pullulan content liquid (a bacterial culture medium) which has a final pH of 4.7 and which contains pullulan of molecular weight of 180, 000 from which said pullulan is produced in a yield of 71% (see Table 1-a, col. 3-4, see also col. 2, lines 19-41 and abstract). It should be noted that Kato et al. pullulan content liquid (a bacterial culture medium) contains the pullulan of molecular weight of 180, 000 which is then precipitated and purified as a solid. Kato et al. disclose that adjusting the pH of the culture medium (the liquid) controls the yield and degree of polymerization of the pullulan produced (see col. 1, lines 25-47 and col. 2, lines 19-41). In addition, Kato et al. disclose that the viscosity of the culture varies depends on its pH (see col. 2, lines 19-41). Furthermore, Kato et al. disclose that the pullulan of low molecular weight can be readily purified and converted to products of low viscosity or to maltotriose (col. 1, lines 35-47). Kato et al. also disclose that the bacteriostat, ethanol can be added to the culture medium (col. 2, lines 7-10).

The difference between applicant's composition and the composition of Kato et al. is that Kato et al. do not determine the bacterial count of the composition (the liquid) and the %(w/w) of the pullulan in the composition.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have prepared the pullulan composition of Kato et al., and to determine the bacterial count and specific %(w/w) of the pullulan in the composition to produce purified product of low viscosity such as maltotriose, depending on need and availability.

One having ordinary skill in the art would have been motivated, to prepare the pullulan composition of Kato et al., and to determine the bacterial count and specific %(w/w) of the

Art Unit: 1623

pullulan in the composition to produce purified product of low viscosity such as maltotriose, depending on need and availability.

In claim 6, applicant claims a method for transporting the high pullulan content liquid of claim 1, which comprises a step of injecting said high pullulan content liquid into a member selected from the group consisting of various shapes and volumes of containers; tanks; containers loaded into or equipped on trains, ships, airplanes, and trucks; and tank trucks; and (b) transporting said high pullulan content liquid under a temperature condition of 14°C or lower. Claims 7, 10, 11, 14 and 15 are drawn to said method of transporting pullulan under specific temperature conditions.

Kato et al. disclose a method of transporting a high pullulan content liquid, which comprises a step of transporting said high pullulan content liquid at a temperature condition of 27°C (see example 1, col. 3, line 53 to col. 4, line 60). Furthermore, Kato et al. disclose a method of transporting their pullulan into and out of a centrifuge (see col. 4, lines 4-13). It should be noted that the composition would be transported out of the centrifuge at the temperature equal to the temperature at which it was centrifuged and that Kato et al. container must have a shape and volume. Furthermore, it is obvious and common in the art to centrifuge compositions, such as the pullulan composition that are prepared from biologically active microorganism compositions, at temperatures lower than room temperature so as to preserve their activity.

The difference between applicant's method and the method of Kato et al. is the temperature at which the pullulan liquid is transported.

Art Unit: 1623

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have used the method of Kato et al., to transport any pullulan liquid at low temperatures such below room temperature, during the process of preparing or centrifuging said pullulan composition, in order to produce purified product of low viscosity such as maltitriose, depending on need and availability.

One having ordinary skill in the art would have been motivated, to use the method of Kato et al., to transport any pullulan liquid at low temperatures such below room temperature, during the process of preparing or centrifuging said pullulan composition, in order to produce purified product of low viscosity such as maltitriose, depending on need and availability.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1-15 have been considered but are not found convincing.

The applicant argues that although Kato discloses pullulan in liquid form, what Kato discloses is a method for producing pullulan from a source of carbon and nitrogen in a liquid medium. This is not a final product, but is merely an intermediate product which can be obtained in the course of producing the pullulan products. However, the final product, at the time Kato was filed (1973), was a solid. Therefore, neither the bacterial count nor the pullulan concentration is determined in Kato. In other words, it was not necessary to Kato to determine either the bacterial count or the final pullulan concentration in the liquid because the pullulan in the culture medium is not the final product but merely an intermediate product. In view of this, it is respectfully submitted that there would have been no motivation in Kato to determine either the bacterial count or pullulan concentration in the solution. On the contrary however, the

Art Unit: 1623

culture medium is a liquid which contains pullulan and thus is also a pullulan composition or product just like applicant's pullulan composition or product regardless of how or when it is produced. It should be noted that the pullulan is first produced in the culture medium (e.g., at final pH 4.7) before it is precipitated. Also, as set forth above, one having ordinary skill in the art would have been motivated, to prepare the pullulan composition of Kato et al., and to determine the bacterial count and specific %(w/w) of the pullulan in the composition to produce purified product of low viscosity such as maltotriose, depending on need and availability.

The applicant argues that from their estimates it can be seen that the pullulan concentration in the solution obtained in the course of producing solid pullulan products in Kato is at most 22.5% (w/w). However, said estimate is not convincing since applicant has not performed Kato et al.'s experiment. Furthermore, Kato et al. disclose higher yields (e.g., 75%) than that which applicant has based or derived their said estimate (see Table 1-a, col. 3-4, see also col. 2, lines 19-41; see also col. 2, lines 23-41).

The applicant argues that Kato teaches nothing about the requirement for controlling the bacterial count and pullulan concentration in the specified range so that the liquid containing this high concentration of pullulan is preserved and can be transported stably. However, it should be noted applicant claims are not drawn to a method of controlling the bacterial count and pullulan concentration.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 1623

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry

/Shaojia Anna Jiang/ Ph.D.  
Supervisory Patent Examiner, Art Unit 1623  
March 1, 2008.